

### REMARKS

New claims 6 and 7 were added. Claims 1 to 7 are now pending. No new matter has been added.

Applicants respectfully request reconsideration of the present application in view of this response.

Applicants respectfully disagree with the Advisory Action's explanations regarding the Patent Office's rejections.

Claims 1 to 5 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,778,987 to Saaski et al. (the "Saaski reference") in view of U.S. Patent No. 5,315,129 to Forrest et al. (the "Forrest reference").

As discussed in Applicants' earlier Responses, the Saaski reference appears to concern an optical measuring device using a spectral modulation sensor having an optically resonant structure. (See Title). The Saaski reference further refers to physical changes induced in the spectral modulation sensor's optically resonant structure by the physical parameter being measured cause microshifts of its reflectivity and transmission curves, and of the selected operating segment(s) thereof being used, as a function of the physical parameter being measured. (See Abstract). The operating segments have a maximum length and a maximum microshift of less than about one resonance cycle in length for unambiguous output from the sensor. (See Abstract).

The secondary Forrest reference appears to concern organic optoelectronic devices such as a modulator and a photodetector having alternating layers of two crystalline planar organic aromatic semiconductors. Abstract, lines 1-5. The Forrest reference refers to a preferred embodiment utilizing 3,4,9,10-perylenetetracarboxylic dianhydride (PTCDA) and 3,4,7,8-naphthalenetetracarboxylic dianhydride (NTCDA). Abstract, lines 11-14. The Forrest reference further refers to the preferred method as employing a chamber containing an inorganic substrate with appropriate material for making electrical contact to the organic structures and sources of PTCDA and NTCDA, the chamber being maintained at a pressure which is generally less than  $10^6$  Torr. Abstract, lines 19-25. The Forrest reference refers to the substrate being separated from the source materials by a minimum separation distance of 10 cm, and that the substrate is held below 150K while the PTCDA and the NTCDA are alternately heated. Abstract, lines 25-29.

In contrast to both the Saaski and Forrest references, claim 1 is directed to a scale for technical devices which are used for high-resolution or ultrahigh-resolution imaging of structures, including:

*a plurality of one of crystalline and amorphous first material layers having a first thickness; and*

*a plurality of one of crystalline and amorphous second material layers which are distinguishable from the first material layers when imaged using one of high-resolution and*

ultrahigh-resolution imaging methods, *the second material layers having a second thickness and the first material layers alternating with the second material layers;*  
*at least one of the first and second material layers having a thickness of less than twenty-five nanometers.*

Claim 1 involves a plurality of one of crystalline and amorphous first material layers having a first thickness and a plurality of one of crystalline and amorphous second material layers which are distinguishable from the first material layers when imaged using high-resolution or ultrahigh-resolution imaging methods, the second material layers having a second thickness and the first material layers alternating with the second material layers. The Saaski reference does not teach or suggest a plurality of one of crystalline and amorphous first material layers and a plurality of one of crystalline and amorphous second material layers which are distinguishable from the first material layers when imaged using high-resolution or ultrahigh-resolution imaging methods, the second material layers having a second thickness and the first material layers alternating with the second material layers. The Office Action even admits that Saaski does not disclose chrome being crystalline.

Moreover, the Saaski reference refers to its “invention” as including a light source, a light transmission means, a spectral modulation sensor having an optically resonant structure and detection means for converting the output light from the spectral modulation sensor into electrical signals. (Specification, col. 2, lines 4-8). The Saaski reference, according to cites provided by the Office Action, refers to adding a light absorbing and/or reflecting coating to the outer surface of an etch stripped layer which forms the covers for the cavities. (Specification, col. 18, lines 60-65). The light absorbing and/or reflecting coating may be formed by using conventional vacuum deposition techniques to deposit two or more alternating layers of chrome and silicon on the outer surface, and the chrome is deposited first. (Specification, col. 18, line 65 to col. 19, line 4). The purported purpose of the light absorbing and/or reflecting coating is to prevent external light from entering optically resonant structure 21A through its cover 28 and to prevent light transmitted through the optically resonant structure 21A into the cover 28 from reentering the optically resonant structure 21A from the cover 28.

Accordingly, the Saaski reference does not render obvious claim 1.

The secondary Forrest reference cannot cure the deficiencies of the Saaski reference, meaning both the Forrest and Saaski references together (although Applicants believe this is not appropriate) do not teach or suggest all of the features of claim 1.

Among other things, the Forrest reference does not appear to teach or suggest a plurality of one of crystalline and amorphous first material layers and a plurality of one of crystalline and amorphous second material layers which are distinguishable from the first material layers when imaged using high-resolution or ultrahigh-resolution imaging methods. Instead, the Forrest reference refers to using only stable, crystalline, aromatic dye compounds, one of the two compounds conducting holes, while the other conducts electrons

(the Forrest reference also refers to using only planar organic aromatic semiconductor which readily forms a crystalline structure). Forrest reference, col. 1, lines 46-49; col. 2, lines 22-34.

Accordingly, the Saaski and Forrest references, alone or in combination, do not render obvious claim 1 under 35 U.S.C. § 103(a).

Since claims 2 to 5 depend, directly or indirectly from claim 1, claims 2 to 5 are allowable for at least the same reasons as claim 1.

To reject a claim as obvious under 35 U.S.C. § 103, the prior art must disclose or suggest each claim element and it must also provide a motivation or suggestion for combining the elements in the manner contemplated by the claim.

The Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a “technologically simple concept” — which is not even the case here, there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person of ordinary skill in the art and having no knowledge of the claimed subject matter (to prevent hindsight issues) to “make the combination in the manner claimed”, stating that:

**In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept.** With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. **But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed.** In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper *prima facie* case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

(See In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Federal Circuit 2000) (citations omitted, italics in original, emphasis added)). Here again, there have been no such findings. The “understanding” in Saaski involves providing an embodiment for enabling longer operating segments and microshifts to be used for greater sensitivity or detection range, and eliminating certain errors caused by fluctuations in input light intensity or by changes in light intensity caused by optical fiber bending and optical fiber connectors. (See Saaski reference, Abstract). The “understanding” in the Forrest reference involves providing an embodiment for fabricating semiconductor devices consisting of PTCDA and NTCDA using organic molecular beam deposition, and addressing the “troublesome” lattice-mismatch and consequent mechanical strains. Col. 2, line 1 et seq. Applicants submit that the Saaski and

Forrest references are not properly combinable in that they focus on different aims, and thus provide structurally different embodiments, and do not contain motivation within either of the references to combine. Motivation to combine the elements of claim 1 in the manner contemplated by claim 1 of the present invention without the benefit of hindsight is lacking in the Saaski and/or Forrest references.

Accordingly, it is respectfully submitted that claims 1 to 5 are allowable. Claims 6 and 7 are new claims fully supported throughout the Specification and contain features analogous to those in claim 1. Applicants respectfully submit that all claims 1 to 7 are allowable.

#### CONCLUSION

In view of all of the above, it is believed that any rejections of claims 1 to 5 have been obviated, and that all currently pending claims 1 to 7 are allowable. It is therefore respectfully requested that the rejections be reconsidered and withdrawn, and that the present application issue as early as possible.

If it would further allowance of the present application, the Examiner is invited to contact the undersigned at the contact information shown below.

Dated: January 18, 2005

Respectfully submitted,

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